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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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LSI LOGIC CORPORATION
1621 BARBER LANE
MS: D-106 LEGAL
MILPITAS, CA 95035

EXAMINER	
MOORE, IAN N	

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/687,201	CZAJA ET AL.	
	Examiner	Art Unit	
	Ian N Moore	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-26* is/are rejected.

7)☒ Claim(s) *7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Claims 1-13,18-22 are amended, and new claims 23-26 are added.
2. An objection to the drawings is withdrawn since it is being amended accordingly.
3. Claim objections, on claims 7 and 13 are withdrawn since they are being amended accordingly.
4. Claim rejection under 35 USC 112, second paragraph on claims 1-22 is withdrawn.
5. Claims 1-21 are rejected by the new ground(s) of rejection necessitated by the amendment.
6. Claim 22 is rejected by the same ground of art rejection.
7. Claims 1, 13, 22 are still provisionally rejected under obviousness-type double patenting, necessitated by the amendment.

Response to Arguments

8. Applicant's arguments filed 8-9-2004 have been fully considered but they are not persuasive.

Regarding claim 1, applicant recites " ...new clause (a) also distinguishes the claims of related application 09/687,199, ..., thereby obviating the double patenting rejection..." in page 14, paragraph 1.

Regarding clams 1, 13, and 22, in response to applicant's argument, the examiner respectfully disagrees that such amendment obviating the double patenting rejection since it is obvious for a mobile station to receives the a message from the serving base station directing performance of a handoff to the target base station as described in new reference Tiedemann's FIG. 3, steps 308, 312,314; see col. 10, lines 15-35. Tiedemann'512

discloses the base station sending the **Early** General Handoff Directional Messages (EGHDM) to the mobile station at various time intervals, and the mobile station performs the pilot signal strength measurement upon receiving EGHDM. Moreover, new reference Jung also discloses the base station sending the HDM messages before the handoff, in FIG. 1. Moreover, it is also well known in the art that the base station communicates with the mobile station by sending a message regarding the handoff since mobile station cannot operate without the base station. Thus, by adding the new limitation (i.e. step a) of "sending a message from the serving base station directing performance of a handoff to the target base station" does not make claims 1 of the instant application patentability different from claim 1 and 21 of patent application (09/687,199).

Regarding claim 13, applicant recites that "...recitation of "**a current value**", ...**after** receiving an HDM...such clarification does not constitute a narrowing of the scope of the claim..." in page 10, paragraph 2.

In response to applicant's remark, the examiner respectfully disagrees that such amendment is non-narrowing amendment at least for the following reasons:

a. None of these limitations are recited in previous claim.
b. Amended claim recites the condition limitation "**after**", which clearly define a specific timing of receiving HDM.
c. Applicant clearly admitted that measuring, comparing, and performing the handoff steps are performed after the HDM is message is received is **the new clause** in order

to distinguish from the cited prior arts and double patenting; see page 9, paragraph 2 "... a new temporal requirement..." and see page 14, paragraph 1, "...new clause..."

Thus, claim 13 still introduces a new limitation and issue that requires a new search, and it is rejected with the new ground of rejection.

Regarding claims 1, 13 and 22, the applicant argued that, "...reverse link hard handoffs were littlie to no interest to Czaja'666 and Ramakrishna'455...MS must stop transmitting to one BS in order to change the transmitting parameter so that it can being transmitting to another BS of a different generation. At that moment of initiating a reverse link handoff, an MS ceases transmitting to an old BS and then begin transmitting to a new BS..." in page 12, paragraph 2.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., MS must stop transmitting to one BS in order to change the transmitting parameter so that it can being transmitting to another BS of a different generation. At that moment of initiating a reverse link handoff, an MS ceases transmitting to an old BS and then begin transmitting to a new BS) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Regarding claims 1, 13 and 22, the applicant argued that, "...'666 does not recognizes or address problems associated with reverse-link handoffs..." (in page 12,

paragraph 3), "...no teaching or suggestion is made to change the prior art approach...Czaja'666 does not recognized ...RL-HHO..." in page 13, paragraph 2, ".....Ramakrishna'455 did not consider a RL handoff as a separate entity..."

In response to applicant argument, the examiner respectfully disagrees that "...'666 does not recognizes or address problems associated with reverse-link handoffs..." (in page 12, paragraph 3), "...no teaching or suggestion is made to change the prior art approach...Czaja'666 does not recognized ...RL-HHO..." in page 13, paragraph 2, "...Ramakrishna'455 did not consider a RL handoff as a separate entity..."

Czaja'726 discloses, a reverse link handoff, in page 4, paragraph 58 and FIG. 12. It is well known in the art that a forward link is the link from a base station to a mobile unit, and the revise link is the link from mobile unit to a base station. Czaja'726's handoff is initiated and assisted by a mobile station after measuring and comparing signal energy/strength between 2G base station (see FIG. 12, BS1, 122) and 3G base station (see FIG. 12, BS2, 123), see page 3, paragraph 41-48. Czaja'666 also discloses a hard handoff, see col. 15-22. Thus, it is clear that a handoff disclosed by Czaja'726 is "a reverse link handoff". Also, per specification, page 18, paragraph 1, when mobile unit is initiating/assisting a handoff, it must occur on the reverse link because a typical mobile station can transmit a signal for only one generation at a time. Thus, it is clear that in the intergenerational handoff (see Czaja'726 FIG. 12) when the mobile unit is initiating/assisting, it must be "a reverse link handoff". Also, both specification and claims 18 and 20 recite, "...the handoff is an intergenerational soft handoff comprising a forward link soft handoff and a **reverse link** hard handoff (claim 18)...and the handoff is an intergenerational hard handoff comprising a forward link hard

handoff and **a reverse link** hard handoff (claim 20)..." Thus, it is clear that a various type of reverse handoff can be performed depending on various scenarios. Accordingly, examiner asserts Czaja'726's handoff as " **a reverse link** handoff or RL-HHO..."

As admitted per applicant in page 13, paragraph 2, Ramakrishna'455 also discloses reverse link handoff in col. 7, lines 53-58. Ramakrishna'455 also discloses the CDMA system is capable of performing both soft handoff and hard handoff, see col. 1, lines 40-50. Thus, it is also clear that Ramakrishna'455 discloses a reverse link handoff or RL-HHO.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Thus, the combined system of Czaja'666 and Ramakrishna'455 discloses, " **a reverse link** handoff or RL-HHO..." at least for the reasons stated above.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., a RL handoff as a separate entity) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

The applicant argued that, "... the Czaja'666 did not propose a method of determining when to initiate RL-HHO that depends on... neither Czaja'666 nor Ramakrishna'455 discloses or teach the acts in clause (e) of claim 1 as previously on file..." in page 14, paragraph 2, "...Czaja'666 make no particular suggestion for controlling the

reverse-link handoff..." in page 14, paragraph 3, "...neither of theses references disclose, teach or fairly suggest initiating a reverse link handoff generation to the condition specified in last clauses of claim 1 (now clause f)..." page 14, paragraph 4.

In response to applicant argument, the examiner respectfully disagrees that "... the Czaja'666 did not propose a method of determining when to initiate RL-HHO that depends on... neither Czaja'666 nor Ramakrishna'455 discloses or teach the acts in clause (e) of claim 1...", "...Czaja'666 make no particular suggestion for controlling the reverse-link handoff...", and "neither of theses references disclose, teach or fairly suggest initiating a reverse link handoff generation to the condition specified in last clauses of claim 1 (now clause f)".

Czaja'666 discloses for initiating a reverse link intergenerational hard handoff between the serving and target base stations (**see col. 7, lines 43-60; a handoff between two generations of CDMA**) if the first parameter is less than or equal to the second parameter (**see col. 5, lines 52-55, see col. 7, lines 20-32, 43-47; note that when the active BS Ec/Io is less than or equal to the candidate BS/threshold Ec/Io, (i.e. candidate BS/threshold Ec/Io is greater than the active BS Ec/Io), the handoff is initiated. Since the handoff is initiated by the mobile unit from the reverse link and performed by BS between intergeneration systems, it is a reverse link hard handoff.)**

Ramakrishna'455 discloses initiating/performing a handoff between serving and target base station if the first parameter is less than or equal to the sum of the second parameter and the offset (**see FIG. 3B, steps 346 and 348, see col. 7, lines 16-55; note that when the signal strength of P1 is less than or equal to the P3 and the delta, the handoff**

occurs/initiates between P1 BS and P3 BS by sending Handoff Direction Message (HDM) or BSAO (base station acknowledgement order) message.)

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Therefore, when considering the combination of Czaja'666 and Ramakrishna'455 as whole at the time of the invention made, one skilled in the art would have been motivated to modify the system of Czaja'666, by providing an offset as a variable while determining the candidate base station to perform handoff, as taught by Ramakrishna'455. The motivation to combine is to obtain the advantages/benefits taught by Ramakrishna'455 since Ramakrishna'455 states at col. 3, line 49-54 that such modification would increase the network efficiency by assisting handoff between a mobile and base-stations while maintaining low dropped call probabilities and without adversely affecting frame error rates.

In view of the above, **the examiner respectfully disagrees** with applicant's argument and believes that the combination of references as set forth in the 103 rejections is proper, thus, Claims 1-23 are obvious over Czaja'666 in view of Ramakrishna'455 for at least the reasons discussed above.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29

USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claim **1, 13, and 22** provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1,12, 21 of copending Application **No. 09/687,199** in view of Tiedemann'512 (U.S. 6,714,512).

Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1, 13, and 22 of the instant application merely broaden the scope of the claim 1, 12, and 21 of the Patent application (**09/687,199**) by eliminating the elements and their functions of the claims. It has been held that the omission an element and its function is an obvious expedient if the remaining elements perform the same function as before. *In re Karlson*, 136 USPQ 184 (CCPA). In addition, **No. 09/687,199** does not explicitly teach (a) first receiving, at a subject mobile station, a message from the servicing base station, and thereafter. However, this feature is well known in the art. Tiedemann'512 teaches (a) first receiving, at a subject mobile station, a message from the servicing base station; **see col. 10, lines 15-35.** Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to receiving, at a subject mobile station, a message from the servicing base station as taught by Tiedemann'512 in the system

of Patent application (**09/687,199**) in order to effectively communicate a hand off information between the mobile station and base station.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Czaja (U.S. 6,567,666) in view of Ramakrishna (U.S. 6,233,455).

Regarding Claim 22, Czaja'666 discloses a computer program on a computing device (**see col. 8, lines 56 to col. 10, lines 33, method/computational claims for the CDMA cellular radiophone system**) wherein the program is capable of directing performance of a reverse link handoff (**see col. 4, lines 675-67; General handoff**) between a servicing base station (**see FIG. 1, active base station B 121 in IS-95-B network**) and a target base station (**see FIG. 1, candidate base station A 141 in IS-2000 network**) that has been directed by a CDMA communication system (**see FIG. 1, CDMA IS-95 and IS-2000 Networks**) having a plurality of base stations in communication (**see FIG. 12 BS1 (Base Station 1) 122 and BS2 123**) with at least one mobile station (**see FIG. 12, MS 124**), wherein each base station transmits at least one associated and corresponding pilot channel

that uniquely identifies the base station (**see col. 1, lines 35-39; note that each base station transmits pilot signals/PN codes for identification**), comprising:

a) a first set of instructions for monitoring a first parameter reflected of a signal received by the subject mobile station from the serving base station, wherein the first parameter that is associated with the serving base station (**see col. 5, lines 35-38; note that mobile unit measures/obtains pilot signal strength (Ec/Io) from active base station**);

b) a second set of instructions for monitoring a second parameter reflected of a signal received by the subject mobile station from the target base station, wherein the second parameter, that is associated with the target base station (**see col. 5, lines 35-40; note that mobile unit measures/obtains pilot signal strength (Ec/Io) from candidate base station**);

c) a third set of instructions for determining if the first parameter is less than or equal to the second parameter (**see col. 5, lines 37-42, 55-60, col. 6, lines 6-13; note that each measurement is compared to the threshold. The threshold must be equal to acceptable signal strength (i.e. setting threshold value to at least existing signal strength of the active BS). Also, determining step includes whether active BS signal strength is lesser or equal to the candidate BS signal strength (i.e. Candidate BS Ec/Io is greater than active/BS threshold Ec/Io). Thus, comparing the measured results with the threshold means comparing the measured signal strength values to existing active BS signal strength in order to determine the signal strength for the handoff.)**

d) returning to step (a) if the first parameter is not less than or equal to the second parameter (**see col. 5, lines 37-52, col. 1, lines 40-43; note that when the measured active BS Ec/Io is not less than or equal the candidate BS/threshold Ec/Io (i.e. Candidate BS/**

threshold Ec/Io is greater than active BS Ec/Io), then the mobile unit must continue to measure other neighbors sine the measured signal strength does not meet the requirement for the handoff); and

e) a fourth set of instructions for initiating a reverse link intergenerational hard handoff between the serving and target base stations **(see col. 7, lines 43-60; a handoff between two generations of CDMA)** if the first parameter is less than or equal to the second parameter **(see col. 5, lines 52-55, see col. 7, lines 20-32, 43-47; note that when the active BS Ec/Io is less than or equal to the candidate BS/threshold Ec/Io, (i.e. candidate BS/threshold Ec/Io is greater than the active BS Ec/Io), the handoff is initiated. Since the handoff is initiated by the mobile unit from the reverse link and performed by BS between intergeneration systems, it is a reverse link hard handoff.)**

Czaja'726 does not explicitly disclose c) determining if the first parameter is less than or equal to the sum of the second parameter and an offset; and d) initiating and performing the selections and/or adjustments if the first parameter is less than or equal to the sum of the second parameter and the offset.

However, the above-mentioned claimed limitations are taught by Ramakrishna'455. In particular, Ramakrishna'455 teaches

a) monitoring a first parameter reflected of a signal received by the subject mobile station from the serving base station **(see FIG. 1, BS within P1 and P2; see FIG. 2A, step 200, measuring pilot signal strength for active sets P1 and/or P2; see col. 5, lines 6-22; see col. 1, lines 60-67)**;

b) monitoring a second parameter reflected of a signal received by the subject mobile station from the target base station (**see FIG. 2A, step 200, measuring pilot signal strength for new active set P3; see col. 5, lines 6-22**);

c) determining if the first parameter is less than or equal to the sum of the second parameter and an offset (**see FIG. 3A, step 314, see col. 6, lines 59 to col. 7, lines 6; p1-p3 ≤ delta 3, that is, p1 ≤ p3 + Delta; note that the difference of signal strength determined by comparing to delta (i.e. determining if P1 is less than equal to the sum of P3 and delta)**),

d) initiating/performing a handoff between serving and target base station if the first parameter is less than or equal to the sum of the second parameter and the offset (**see FIG. 3B, steps 346 and 348, see col. 7, lines 16-55; note that when the signal strength of P1 is less than or equal to the P3 and the delta, the handoff occurs/initiates between P1 BS and P3 BS by sending Handoff Direction Message (HDM) or BSAO (base station acknowledgement order) message.**)

In view of this, having the system of Czaja'726 and then given the teaching of Ramakrishna'455, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Czaja'726, by providing an offset as a variable while determining the candidate base station to perform handoff, as taught by Ramakrishna'455. The motivation to combine is to obtain the advantages/benefits taught by Ramakrishna'455 since Ramakrishna'455 states at col. 3, line 49-54 that such modification would increase the network efficiency by assisting handoff between a mobile and base-

stations while maintaining low dropped call probabilities and without adversely affecting frame error rates.

11. Claims 1-6, 8, 13-17, and 23-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Czaja'666 and Ramakrishna'455, in view of Tiedemann (U.S. 6,714,512).

Regarding Claim 1 and 23-25, Czaja'666 discloses a method of initiating a reverse-link handoff (**see col. 4, lines 675-67; General handoff**) between the serving base station (**see FIG. 1, active base station B 121 in IS-95-B network**) and the target base station (**see FIG. 1, candidate base station A 141 in IS-2000 network**) in a CDMA communication system (**see FIG. 1, CDMA IS-95 and IS-2000 Networks**) having a plurality of base stations in communication (**see FIG. 12 BS1 (Base Station 1) 122 and BS2 123**) with at least one mobile station (**see FIG. 12, MS 124**), wherein each base station transmits at least one associated and corresponding pilot channel that uniquely identifies the base station (**see col. 1, lines 35-39; note that each base station transmits pilot signals/PN codes for identification**) comprising:

receiving, at a subject mobile station, a message from the servicing base station directing performance of a handoff to the target station (**see col. 4, lines 30 to col. 5, lines 12; the active base station sending GHDM, general handoff direction message, to the mobile unit by directing performance of a handoff to the neighbor/target station**);

b) monitoring a first parameter reflective of a signal received by the subject mobile station from the serving base station, wherein the first parameter that is associated with the

serving base station (**see col. 5, lines 35-38; note that mobile unit measures/obtains pilot signal strength (Ec/Io) from active base station**);

c) monitoring a second parameter reflective of a signal received by the subject mobile station from the target base station, wherein the second parameter, that is associated with the target base station (**see col. 5, lines 35-40; note that mobile unit measures/obtains pilot signal strength (Ec/Io) from candidate base station**);

d) determining if the first parameter is less than or equal to the second parameter (**see col. 5, lines 37-42, 55-60, col. 6, lines 6-13; note that each measurement is compared to the threshold. The threshold must be equal to acceptable signal strength (i.e. setting threshold value to at least existing signal strength of the active BS). Also, determining step includes whether active BS signal strength is lesser or equal to the candidate BS signal strength (i.e. Candidate BS Ec/Io is greater than active/BS threshold Ec/Io). Thus, comparing the measured results with the threshold means comparing the measured signal strength values to existing active BS signal strength in order to determine the signal strength for the handoff.)**

e) returning to step (b) if the first parameter is not less than or equal to the second parameter (**see col. 5, lines 37-52, col. 1, lines 40-43; note that when the measured active BS Ec/Io is not less than or equal the candidate BS/threshold Ec/Io (i.e. Candidate BS/ threshold Ec/Io is greater than active BS Ec/Io), then the mobile unit must continue to measure other neighbors sine the measured signal strength does not meet the requirement for the handoff**); and

e) initiating a reverse link intergenerational hard handoff between the serving and target base stations (**see col. 7, lines 43-60; a handoff between two generations of CDMA**) if the first parameter is less than or equal to the second parameter (**see col. 5, lines 52-55, see col. 7, lines 20-32, 43-47; note that when the active BS Ec/Io is less than or equal to the candidate BS/threshold Ec/Io, (i.e. candidate BS/threshold Ec/Io is greater than the active BS Ec/Io), the handoff is initiated. Since the handoff is initiated by the mobile unit from the reverse link and performed by BS between intergeneration systems, it is a reverse link hard handoff.**)

Czaja'726 does not explicitly disclose d) determining if the first parameter is less than or equal to the sum of the second parameter and an offset; and e) initiating and performing the selections and/or adjustments if the first parameter is less than or equal to the sum of the second parameter and the offset.

However, the above-mentioned claimed limitations are taught by Ramakrishna'455. In particular, Ramakrishna'455 teaches

b) monitoring a first parameter reflective of a signal received by the subject mobile station from the serving base station (**see FIG. 1, BS within P1 and P2; see FIG. 2A, step 200, measuring pilot signal strength for active sets P1 and/or P2; see col. 5, lines 6-22; see col. 1, lines 60-67**);

c) monitoring a second parameter reflective of a signal received by the subject mobile station from the target base station (**see FIG. 2A, step 200, measuring pilot signal strength for new active set P3; see col. 5, lines 6-22**);

d) determining if the first parameter is less than or equal to the sum of the second parameter and an offset (**see FIG. 3A, step 314, see col. 6, lines 59 to col. 7, lines 6; p1-p3 ≤ delta 3, that is, p1 ≤ p3 + Delta; note that the difference of signal strength determined by comparing to delta (i.e. determining if P1 is less than equal to the sum of P3 and delta**)),

e) initiating/performing a handoff between serving and target base station if the first parameter is less than or equal to the sum of the second parameter and the offset (**see FIG. 3B, steps 346 and 348, see col. 7, lines 16-55; note that when the signal strength of P1 is less than or equal to the P3 and the delta, the handoff occurs/initiates between P1 BS and P3 BS by sending Handoff Direction Message (HDM) or BSAO (base station acknowledgement order) message.**)

In view of this, having the system of Czaja'726 and then given the teaching of Ramakrishna'455, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Czaja'726, by providing an offset as a variable while determining the candidate base station to perform handoff, as taught by Ramakrishna'455. The motivation to combine is to obtain the advantages/benefits taught by Ramakrishna'455 since Ramakrishna'455 states at col. 3, line 49-54 that such modification would increase the network efficiency by assisting handoff between a mobile and base-stations while maintaining low dropped call probabilities and without adversely affecting frame error rates.

Neither Czaja'666 nor Ramakrishna'455 explicitly discloses (a) first receiving, at a subject mobile station, a message from the servicing base station, and thereafter.

However, the above-mentioned claimed limitations are taught by Tiedemann'512. In particular, Tiedemann'512 teaches

a) receiving, at a subject mobile station (**see FIG. 1, MS 116**), a message (**see FIG. 3, Early General Handoff Directional Messages (EGHDM)**) from the servicing base station (**see FIG. 1, BS 112**) directing performance of a handoff to the target station (**see FIG. 1, BS 114; see FIG. 3, steps 308; see col. 10, lines 15-35; BS 112 sends EGHDM message to MS 116 by directing early performance of a handoff to the target/neighbor BS4; note that it is clear that the receiving step is the "first step" since the received message is "early" HDM message; also FIG. 3, discloses timing diagram, thus it is also clear the EGHDM is received first**); thereafter

b) monitoring a first parameter reflective of a signal received by the subject mobile station from the serving base station (**see FIG. 3, between step 312 and 314; note that after MS receives EGHDM message from BS and timer value is reached, it measures the pilot signal strength Ec/Io; see col. 10, lines 22-27).**

In view of this, having the combined system of Czaja'666 and Ramakrishna'455, then given the teaching of Tiedemann'512, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Tiedemann'512 and Ramakrishna'455, by mechanism of receiving initially EGHDM message at the mobile from the base station and performs measuring of signal power thereafter, as taught by Tiedemann'512. The motivation to combine is to obtain the advantages/benefits taught by Tiedemann'512 since Tiedemann'512 states at col. 3, line 50 to col. 4, lines 15, see col. 11, lines 43-47 that such modification would provide early detection and assigning of

codes channel for signaling in handoff thereby allowing both MS and BS to perform complete handoff procedure.

Regarding Claim 13, Czaja'726 discloses an apparatus in a subject mobile station for initiating a reverse link handoff **(see col. 4, lines 675-67; General handoff)** between the serving base station **(see FIG. 1, active base station B 121 in IS-95-B network)** and the target base station **(see FIG. 1, candidate base station A 141 in IS-2000 network)** in a CDMA communication system **(see FIG. 1, CDMA IS-95 and IS-2000 Networks)** having a plurality of base stations in communication **(see FIG. 12 BS1 (Base Station 1) 122and BS2 123)** with at least one mobile station **(see FIG. 12, MS 124)**, comprising:

a) a pilot signal strength report block **(see FIG. 12, a pilot signal block within CDMA MS)** for sending a PSMM to the serving base station when a first parameter, associated with the target base station is greater than a threshold parameter T -Add **(see col. 4, lines 30-61; col. 7, lines 39-52; note that mobile unit sends PSMM to active base station when Ec/Io parameter of the stored/newly-added candidate BS is larger than T_ADD threshold)**; and

b) a reverse link handoff control block **(see FIG. 12, a handoff control block within CDMA MS)** configured to implement a reverse link intergenerational hard handoff **(see col. 7, lines 23-26; note that the handoff is triggered when the active BS signal power is determined to be too weak, and the handoff is performed between intergeneration Base station with different frequency operation, thus, the hard handoff)**, and

when the serving base station transmits an intergenerational handoff direction message to the mobile station (**see col. 5, lines 1-12, col. 7, lines 42-55; note that active base station transmits the general handoff direction message, GHDM, to the mobile station**) and when a second parameter associated with the serving base station (**see col. 5, lines 37-52, col. 1, lines 40-43; the measured Serving BS Ec/Io parameter/value)** is less than or equal to the a current value of the first parameter (**see col. 5, lines 35-40; measured Candidate BS Ec/Io; see col. 5, lines 37-42, 55-60, col. 6, lines 6-13; note that each measurement is compared to the threshold. The threshold must be equal to acceptable signal strength (i.e. setting threshold value to at least existing signal strength of the active BS). Also, determining step includes whether active BS signal strength is lesser or equal to the candidate BS signal strength (i.e. Candidate BS Ec/Io is greater than active/BS threshold Ec/Io). Thus, comparing the measured results with the threshold means comparing the measured signal strength values to existing active BS signal strength in order to determine the signal strength for the handoff.)**

Czaja'726 does not explicitly disclose a second parameter is less than or equal to a sum of the first parameter and an offset.

However, the above-mentioned claimed limitations are taught by Ramakrishna'455. In particular, Ramakrishna'455 teaches means for initiating a handoff between serving **see FIG. 1, BS within P1 and P2)** and target base station (**see FIG. 2A, step 200, measuring pilot signal strength for new active set P3)** wherein the a second parameter is less than or equal to a sum of the current value of the first parameter and an offset (**see FIG. 3A, step 314, see col. 6, lines 59 to col. 7, lines 6; p1-p3≤ delta 3, that is, p1 ≤ p3 + Delta; note**

that difference of signal strength determined by comparing to delta (i.e. determining if P1 is less than equal to the sum of P3 and delta Also, see FIG. 3B, steps 346 and 348, see col. 7, lines 16-55; note that when the signal strength of P1 is less than or equal to the P3 and the delta. The handoff occurs/initiates between P1 BS and P3 BS by sending Handoff Direction Message (HDM) or BSAO (base station acknowledgement order) message.)

In view of this, having the system of Czaja'726 and then given the teaching of Ramakrishna'455, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Czaja'726, by providing an offset as a variable while determining the candidate base station to perform handoff, as taught by Ramakrishna'455. The motivation to combine is to obtain the advantages/benefits taught by Ramakrishna'455 since Ramakrishna'455 states at col. 3, line 49-54 that such modification would increase the network efficiency by assisting handoff between a mobile and base-stations while maintaining low dropped call probabilities and without adversely affecting frame error rates.

Neither Czaja'666 nor Ramakrishna'455 explicitly discloses (b) after the serving base station transmits a message.

However, the above-mentioned claimed limitations are taught by Tiedemann'512. In particular, Tiedemann'512 teaches

a) implement a handoff after the servicing base station (**see FIG. 1, BS 112**) transmits an intergenerational handoff direction message (**see FIG. 3, Early General Handoff Directional Messages (EGHDM)**) to the mobile station (**see FIG. 1, MS 116**) (

receiving, at a subject mobile station (**see FIG. 1, MS 116**), a message (**see FIG. 3, steps 308; see col. 10, lines 15-35; BS 112 sends EGHDM message to MS 116 by directing early performance of a handoff to the target/neighbor BS4; note that it is clear that the receiving step is the "first step" since the received message is "early" HDM message; also FIG. 3, discloses timing diagram, thus it is also clear the EGHDM is received first. Then after, see FIG. 3, between step 312 and 314; note that after MS receives EGHDM message from BS and timer value is reached, it measures the pilot signal strength Ec/Io for the handoff; see col. 10, lines 22-27; Thus, it is clear that the handoff procedure is performed after BS112 transmits an EGHDM message to MS 116.)**

In view of this, having the combined system of Czaja'666 and Ramakrishna'455, then given the teaching of Tiedemann'512, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Tiedemann'512 and Ramakrishna'455, by mechanism of receiving initially EGHDM message at the mobile from the base station and performs measuring of signal power thereafter, as taught by Tiedemann'512. The motivation to combine is to obtain the advantages/benefits taught by Tiedemann'512 since Tiedemann'512 states at col. 3, line 50 to col. 4, lines 15, see col. 11, lines 43-47 that such modification would provide early detection and assigning of codes channel for signaling in handoff thereby allowing both MS and BS to perform complete handoff procedure.

Regarding claims 2 and 16, the combined system of Czaja'726, Ramakrishna'455 and Tiedemann'512 discloses all aspects of the claimed invention set forth in the rejection of Claims 1 and 13 as described above. Since Czaja'726 does not utilize the offset/delta/adjustment value during determining process, **it is clear that the value is zero**. Ramakrishna'455 further teaches that **the offset is arbitrary value set by the system operator (see col. 6, lines 63-65)**. Thus, the combined system of Czaja'726 and Ramakrishna'455 further teaches the offset is zero.

In view of this, having the combined system of Czaja'726 and Ramakrishna'455, then given the teaching of Tiedemann'512, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Czaja'726 and Ramakrishna'455, by utilizing zero offset value, as taught by Tiedemann'512, for the same motivation as stated above in Claims 1 and 13.

Regarding claim 3, the combined system of Czaja'726, Ramakrishna'455 and Tiedemann'512 discloses all aspects of the claimed invention set forth in the rejection of Claims 1 and 13 as described above. Ramakrishna'455 further teaches wherein the offset is based on a Quality of Service (QoS) parameter (**see col. 3, lines 27-45, see col. 5, lines 25-28; note that delta value is the quality value set by network operator in order to select the optimal handoff by utilizing the quality path; thus, the delta value is set according to the quality/grade of service for determining the optimal handoff**).

In view of this, having the combined system of Czaja'726 and Ramakrishna'455, then given the teaching of Tiedemann'512, it would have been obvious to one having ordinary

skill in the art at the time the invention was made to modify the combined system of Czaja'726 and Ramakrishna'455, by setting the delta value based on quality/grade, as taught by Tiedemann'512, for the same motivation as stated above in Claims 1.

Regarding claim 4, the combined system of Czaja'726, Ramakrishna'455 and Tiedemann'512 discloses all aspects of the claimed invention set forth in the rejection of Claims 1 and 12 as described above. Czaja'666 discloses Frame Error Rate (FER) parameter (see FIG. 10-11; note that FER parameter is computed/compared between two system generations; see col. 8, lines 4-10. Ramakrishna'455 further teaches wherein the offset is based on a Frame Error Rate (FER) parameter **(see col. 3, lines 27-45, see col. 5, lines 25-28; note that delta value is the quality value set by network operator according to FER in order to select the optimal handoff by utilizing/maintaining the quality path; thus, the delta value is set according to FER for determining the optimal handoff.)**

In view of this, having the combined system of Czaja'726 and Ramakrishna'455, then given the teaching of Tiedemann'512, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Czaja'726 and Ramakrishna'455 as taught by Tiedemann'512, for the same motivation as stated above in Claims 1.

Regarding claim 5, the combined system of Czaja'726, Ramakrishna'455 and Tiedemann'512 discloses all aspects of the claimed invention set forth in the rejection of Claim 1 as described above. Czaja'666 further teaches wherein the first parameter is a first

Ec/Io value associated with serving base station (**see col. 5, lines 37-52, col. 1, lines 40-43; the measuring the Serving BS Ec/Io parameter/value).**

Regarding claim 6, the combined system of Czaja'726, Ramakrishna'455 and Tiedemann'512 discloses all aspects of the claimed invention set forth in the rejection of Claim 1 as described above. Czaja'666 further teaches wherein the second parameter is a second Ec/Io value associated with the target base station (**see col. 5, lines 35-40; the measuring candidate/threshold BS Ec/Io parameter/value).**

Regarding claim 14, the combined system of Czaja'726, Ramakrishna'455 and Tiedemann'512 discloses all aspects of the claimed invention set forth in the rejection of Claim 1 as described above. Czaja'666 further teaches wherein the first parameter is a target base station Ec/Io (**see col. 5, lines 35-40; the measuring candidate/threshold BS Ec/Io parameter/value).**

Regarding claim 15, the combined system of Czaja'726, Ramakrishna'455 and Tiedemann'512 discloses all aspects of the claimed invention set forth in the rejection of Claim 1 as described above. Czaja'666 further teaches wherein the second parameter is a servicing base station Ec/Io (**see col. 5, lines 37-52, col. 1, lines 40-43; the measuring Serving BS Ec/Io parameter/value).**

Regarding claims 8 and 17 the combined system of Czaja'726, Ramakrishna'455, and Tiedemann'512 discloses all aspects of the claimed invention set forth in the rejection of Claims 1 and 13 as described above, and Czaja'726 further teaches wherein the step (e) of initiating a reverse link intergenerational hard handoff is autonomously performed by the mobile station (**see col. 7, lines 39-60; note that the intergenerational handoff is automatically initiated/performed by the mobile unit from the reverse link and responded/performed by BS (i.e. hard handoff)**.)

Regarding claim 26, Czaja'666 discloses the detecting pilot signal strength between the serving and target base station as described above in claim 1. Ramakrishna'455 further discloses wherein the offset is based on different in symbol detection efficiency (see col. 1, lines 50-67). Note that the combined system of Czaja'666 and Ramakrishna'455 discloses a CDMA system and measuring pilot signal strength. Note the CDMA system utilizes pilot symbols in transmission. Thus, it is clear that when detecting and measuring pilot signal strength or power, it is detecting or measuring the pilot symbol detecting efficiency since at lower power, pilot symbol cannot be detected. Thus, it is also the clear that the offset is the difference between pilot signal strengths.

12. Claims 9-12 and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system of Czaja'726, Ramakrishna'455 and Tiedemann'512, as applied to claims 1 and 13 above, and further in view of well established teaching in art.

Regarding claims 9, 11, 18 and 20, the combined system of Czaja'726, Ramakrishna'455 and Tiedemann'512 discloses wherein the reverse-link handoff between the servicing and target base station is part of an intergenerational handoff in the rejection of Claims 1 and 13 as described above, and Czaja'726 further teaches wherein the handoff is an intergenerational reverse link handoff.

Neither Czaja'726, Ramakrishna'455, nor Tiedemann'512 explicitly discloses wherein the handoff is an intergenerational soft handoff comprising a forward link soft handoff and a reverse link hard handoff, and wherein the handoff is an intergenerational hard handoff comprising a forward link hard handoff and a reverse link hard handoff.

However, the above-mentioned claimed limitations are well known in the art of intergenerational handoff. In particular, the handoff is an intergenerational soft handoff comprising a forward link soft handoff and a reverse link hard handoff, and the handoff is an intergenerational hard handoff comprising a forward link hard handoff and a reverse link hard handoff. Note that Czaja'726 teaches a mobile unit initiating a handoff by utilizing the signal strength, and base station instructs the mobile to handoff. In addition, the mobile unit performs additional requirements during a handoff and before the completion. Also, it is well known in the art of CDMA that either the base station and/or the mobile unit can perform the handoff (i.e. intergenerational soft handoff and intergenerational hard handoff).

In view of this, having the combined system of Czaja'666, Ramakrishna'455 and Tiedemann'512, then given the well established teaching of the art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the combined system of Czaja'726, Ramakrishna'455 and Tiedemann'512, by providing a

various of intergeneration handoffs, as taught by well established teaching in the art. The motivation to combine is to obtain the advantages/benefits taught by well established teaching in the art that since Czaja'726 states at see col. 3, lines 1-5, 21-25 that such modification would provide 3G system to have backward compatibility with the 2G system at the signaling call processing level thereby, avoiding the handoff disadvantages.

Regarding claims 10, 12, 19 and 21 the combined system of Czaja'726, Ramakrishna'455, Tiedemann'512 and well established teaching in art discloses all aspects of the claimed invention set forth in the rejection of Claims 1,9,11,13,18 and 20 as described above, and Czaja'726 further teaches wherein the mobile station autonomously determines the handoff based on measurement made by the mobile station **(see col. 7, lines 39-60; note that the handoff is automatically performed by the mobile unit).** Ramakrishna'455 also discloses wherein the mobile station autonomously determines timing of completion of the handoff based on measurement made by the mobile station **(FIG. 4A-B, where the signal strength is measured against time; see col. 2, lines 65 to col. 3, lines 26.)**

Allowable Subject Matter

13. **Claim 7** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ian N Moore whose telephone number is 571-272-3085. The examiner can normally be reached on M-F: 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Vanderpuye can be reached on 571-272-3078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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BRIAN NGUYEN
PRIMARY EXAMINER